

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-244205

(43)Date of publication of application : 19.09.1995

(51)Int.CI.

G02B 1/11
G02B 5/28

(21)Application number : 06-035624

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(22)Date of filing : 07.03.1994

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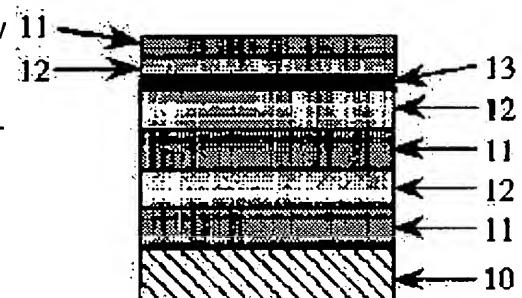
(54) ANTI-REFLECTION FILM

(57)Abstract:

PURPOSE: To widen anti-reflection zone and to attain a sufficient anti-reflection effect by interposing an intermediate reflection index layers between respective pairs of laminated layers formed by alternately repeatedly laminating high refractive index layers and a low refractive index layers to make a multilayered films.

CONSTITUTION: An anti-reflection film having reflection effect at 180-350m wavelength is constituted of multilayered films formed by alternately and repeatedly laminating high refractive index layers and low refractive index layers and interposing layers of the intermediate refractive index layer between respective pairs of laminated layers.

One of YbF₃, DyF₃, HoF₃, EuF₃ and ErF₃ is used as a material of the intermediate refractive index layer. For example, two NbF₃ layers of the high refractive index film 11 and two AlF₃ layers of the low refractive index film 12 are laminated on a substrate 10 made of a synthetic quartz as a lens so that the NdF₃ layers and the AlF₃ layers are respectively alternately arranged, and further a YbF₃ layer of the intermediate refractive index layer 13, the NdF₃ layer of the high refractive index layer 11 and the AlF₃ layer of the low refractive index layer 12 are laminated thereon in this order to form the multilayered anti-reflection film.



LEGAL STATUS

[Date of request for examination]

26.02.2001

[Date of sending the examiner's decision of rejection]

23.03.2004

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[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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